

Claims

1. An extruder for plasticizing thermoplastic media, provided at one end with a granule inlet (E) in an inlet zone and at its opposite end with an outlet bore (A), having a motor-driven threaded spindle (S) that is located within a jacket (M) with an opposite jacket thread (MG), characterized in that, across a plasticizing zone of the spindle length, the length-specific free total cross section ($GS + QM$) of the spindle thread (SG) and of the jacket thread (MG) is approximately constant, and the free spindle thread cross section (QS) and the free jacket thread cross section (QM) change linearly in said zone in a complementary manner.
2. An extruder according to claim 1, characterized in that the free spindle cross section (QS) varies at its inlet side between 10% - 90% and at its outlet side between 20% - 80% of the free total cross section ($QS + QM$).
3. An extruder according to any of the above claims, characterized in that one of the two threads (MG, SG) is a trapezoidal thread and the other thread recess has a flat shaped thread flank (FF) at least in the direction of conveyance (F).
4. An extruder according to claim 3, characterized in that the thread (GM) with the flat thread flank (FF) is designed as a concave half round thread.
5. An extruder according to one of the claims 1 or 2, characterized in that the thread recesses of both threads (MG, SG) have steep flanks (SF) on their given inlet side and flat flanks (FF) on their given outlet side.

6. An extruder according to any of the above claims, characterized in that both threads (MG, SG) are multi-start threads with a different number of starts.
7. An extruder according to claim 6, characterized in that one of the threads (SG) is a two-start thread and the other a three or four-start thread.
8. An extruder according to any of the above claims, characterized in that the diameter (D) to the length ratio of the threaded spindle (S) approximately 1 to 2 to 1 to 549 *. An extruder according to any of the above claims, characterized in that the spindle diameter (D) is approximately 80 mm.
9. An extruder according to any of the above claims, characterized in that the free total cross section ($QS + QM$) of the threads (S, M) is 50 to 150 mm².
10. An extruder according to any of the above claims, characterized in that it is connected at its outlet to a plastic injection or molding system.

* Translator's note: This translation is based on an incomplete sentence in the German-language document.